



<b>Form 1449 (Modified)</b> <b>Information Disclosure Statement By Applicant</b> (Use Several Sheets if Necessary)	Atty Docket No.	Application No.:
	<b>SRI1P044/US-4390-2</b>	<b>10/059,033</b>
	Applicant:	
	<b>Pelrine, et al.</b>	
	Filing Date	Group
	<b>01/29/02</b>	<b>2834</b>

### U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
	A1	5,977,685	11/02/99	Kurita, et al.			06/03/96
	A2	6,060,811	05/09/00	Fox, et al.			07/25/97
	A3	6,184,608	02/06/01	Cabuz, et al.			12/29/98
	A4	6,249,076	06/19/01	Madden, et al.			04/14/99
	A5	4,885,783	12/05/89	Whitehead, et al.			04/10/87
	A6	5,788,468	08/04/98	Dewa, et al.			11/03/94
	A7	6,108,275	08/22/00	Hughes, et al.			12/16/97
	A8	6,333,595B1	12/25/01	Horikawa, et al.			02/16/99
	A9	6,140,131	10/31/00	Sunakawa, et al.			09/24/98
	A10	6,201,398B1	03/13/01	Takada			02/06/97
	A11	5,591,986	01/07/97	Niigaki, et al.			09/02/94
	A12	5,744,908	04/28/98	Kyushima			03/10/97
	A13	6,334,673B1	01/01/02	Kitahara, et al.			06/02/99
	A14	5,883,466	03/16/99	Suyama et al.			06/14/97
	A15	6,097,821	08/01/00	Yokoyama, et al.			11/25/97
	A16	6,055,859	05/02/00	Kozuka et al.			09/26/97
	A17	6,252,221B1	06/26/01	Kaneko, et al.			06/21/99
	A18	6,075,504	06/13/00	Stoller			03/19/93
	A19	6,037,707	03/14/00	Gailus, et al.			03/03/98
	A20	5,914,901	06/22/99	Gershensheld, et al.			06/22/99
	A21	5,912,499	06/15/99	Diem, et al.			12/22/98

### Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No

### Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	B1	Bar-Cohen, Yoseph, JPL, <i>WorldWide ElectroActive Polymers, EAP (Artificial Muscles) Newsletter</i> , Vol. 3, No.1, June 2001.
Examiner		Date Considered

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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## Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	C1	Bharti, V., Z.-Y. Cheng, S. Gross, T.-B. Xu, and Q. M. Zhang, "High electrostrictive strain under high mechanical stress in electron-irradiated poly(vinylidene fluoride-trifluoroethylene) copolymer," <i>Appl. Phys. Lett.</i> Vol. 75, 2653-2655 (October 25, 1999).
	C2	Bharti, V., H. S. Xu, G. Shanthi, and Q. M. Zhang, "Polarization and Structural Properties of High Energy Electron Irradiated Poly(vinylidene fluoride-trifluoroethylene) Copolymer Films," to be published in <i>J. Appl. Phys.</i> (2000).
	C3	Calvert, P. and Z. Liu, "Electrically stimulated bilayer hydrogels as muscles," Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California, USA, pp. 236-241.
	C4	Kornbluh, R., Pelrine, R., Eckerie, J., Joseph, J., "Electrostrictive Polymer Artificial Muscle Actuators", IEEE International Conference on Robotics and Automation, Leuven, Belgium, 1998
	C5	Kornbluh, R., R. Pelrine, Jose Joseph, Richard Heydt, Qibing Pei, Seiki Chiba, 1999. "High-Field Electrostriction Of Elastomeric Polymer Dielectrics For Actuation", Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California, USA. pp. 149-161.
	C6	Kornbluh, R., R. Pelrine, Q. Pei, S. Oh, and J. Joseph, 2000. "Ultrahigh Strain Response of Field-Actuated Elastomeric Polymers," Proceedings of the 7th SPIE Symposium on Smart Structures and Materials-Electroactive Polymers and Devices (EAPAD) Conference, March 6-8, 2000, Newport Beach, California, USA, pp. 51-64.
	C7	Kornbluh, R., Pelrine, R. Joseph, J., Pei, Q. and Chiba, S., "Ultra-High Strain Response of Elastomeric Polymer Dielectrics", Proc. Materials Res. Soc., Fall meeting, Boston, MA, pages 1-12, December 1999
	C8	Liu, Y., T. Zeng, Y.X. Wang, H. Yu, and R. Claus, "Self-Assembled Flexible Electrodes on Electroactive Polymer Actuators," Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California, USA., pp. 284-288.
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**Other Documents**

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	D1	Liu, C., Y. Bar-Cohen, and S. Leary, "Electro-statically stricted polymers (ESSP)," Proceedings of the SPIE International Symposium on Smart Structures and Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California, USA., pp. 186-190.
	D2	Pelrine <i>et al.</i> , "Electroactive Polymer Electrodes", U.S. Patent Application No. 09/619,843, filed July 20, 2000, 54 pages
	D3	Pelrine, R., R. Kornbluh, and J. Joseph, "Electrostriction of Polymer Dielectrics with Compliant Electrodes as a Means of Actuation," <i>Sensors and Actuators A: Physical</i> , Vol. 64, 1998, pp.77-85.
	D4	Pelrine, R., R. Kornbluh, J. Joseph, and S. Chiba, "Electrostriction of Polymer Films for Microactuators," <i>Proc. IEEE Tenth Annual International Workshop on Micro Electro Mechanical Systems</i> , Nagoya, Japan, January 26-30, 1997, pp. 238-243.
	D5	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1998 <i>Final Report on Artificial Muscle for Small Robots</i> , ITAD-3482-FR-99-36, SRI International, Menlo Park, California, 1999
	D6	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1999 <i>Final Report on Artificial Muscle for Small Robots</i> , ITAD-10162-FR-00-27, SRI International, Menlo Park, California, 2000
	D7	Pelrine, R., R. Kornbluh, Q. Pei, and J. Joseph, "High Speed Electrically Actuated Elastomers with Over 100% Strain," <i>Science</i> , Vol. 287, No. 5454, pages 1-21, 2000
	D8	Pelrine, R., J. Eckerle, and S. Chiba, "Review of Artificial Muscle Approaches," invited paper, in <i>Proc. Third International Symposium on Micro Machine and Human Science</i> , Nagoya, Japan, October 14-16, 1992
	D9	Shahinpoor, M., "Micro-electro-mechanics of Ionic Polymer Gels as Electrically Controllable Artificial Muscles," <i>J. Intelligent Material Systems and Structures</i> , Vol. 6, pp. 307-314, May 1995
	D10	Zhang, Q., V. Bharti, and X. Zhao, "Giant Electrostriction and Relaxor Ferroelectric Behavior in Electron-irradiated Poly(vinylidene fluoride-trifluoroethylene) Copolymer," <i>Science</i> , Vol. 280, pp. 2101-2104 (26 June 1998).
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